Amendments to the Claims:

This listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of configuring an antenna, the method comprising:

constructing the antenna to comprise a plurality of antenna elements; and

configuring the antenna for line of sight (LOS) communication[[;]] such that the separation of the antenna elements [[is]] are set in relation to communications distance, communication wavelength and number of antenna elements.

2. (Canceled)

3. (Previously Presented) The method according to claim 1 wherein the antenna configuration maximizes multiple-input multiple-output (MIMO) channel capacity.

4. (Previously Presented) The method according to claim 1 wherein for a linear antenna, the separation of the antenna elements is set in relation to $\sqrt{D\lambda / N}$ where D is communications distance, λ is communication wavelength and N is number of antenna elements.

5. (Currently Amended) The method according to claim 1 wherein for a square grid antenna the antenna elements[[,]] separation is set in relation to $\sqrt{D\lambda / N}$ where D is communications distance, λ is communication wavelength and N is number of antenna elements.

6. (Previously Presented) The method according to claim 5 wherein $N=n^2$ for n an integer greater than 1.

7. (Previously Presented) The method according to claim 1 wherein for a rectangular grid antenna, the separation of the antenna elements is set in relation to $\sqrt{D\lambda / N}$ where D is communications distance, λ is communication wavelength and N is number of antenna elements in dimension of separation.

8. (Previously Presented) The method according to claim 7 wherein the dimension of separation is horizontal dimension.

9. (Previously Presented) The method according to claim 7 wherein the dimension of separation is vertical dimension.

10. (Previously Presented) The method according to claim 1 wherein for a triangular grid antenna with three antenna elements, the separation of the antenna elements is set in relation to $\sqrt{D\lambda / 3}$, where D is communications distance and λ is communication wavelength.

11. (Currently Amended) A method of configuring an antenna ~~an antenna comprising~~, the method comprising:

constructing the antenna to comprise a plurality of clusters of antenna elements; and

configuring the antenna such that the plurality of clusters of antenna elements are separated by a distance set in relation to communications distance.

12. (Previously Presented) The method according to claim 11 wherein the antenna is configured such that the plurality of clusters of antenna elements are separated by a distance set in relation to communication wavelength.

13. (Previously Presented) The method according to claim 11 wherein for a linear antenna the plurality of clusters of antenna elements are separated by a

distance set in relation to $\sqrt{D\lambda / L}$ where D is communications distance, λ is communication wavelength and L is number of clusters.

14. (Previously Presented) The method according to claim 11 wherein for a square grid antenna the plurality of clusters of antenna elements are separated by a distance set in relation to $\sqrt{D\lambda / \sqrt{L}}$ where D is communications distance, λ is communication wavelength and L is number of clusters.

15. (Previously Presented) The method according to claim 14 wherein $L=l^2$ for l an integer greater than 1.

16. (Previously Presented) The method according to claim 11 wherein the antenna elements within a cluster are separated by a distance smaller than the smallest distance between clusters.

17. (Currently Amended) The method according to claim <u>11</u>[[1]] wherein the antenna configuration is three-dimensional.

18. (Previously Presented) The method according to claim 17 wherein the antenna configuration comprises two layers, where each layer comprises a planar arrangement of antenna elements on a square grid.

19. (Previously Presented) The method according to claim 17 wherein the antenna configuration comprises antenna elements positioned equidistant in a three-dimensional space.

20. (Previously Presented) The method according to claim 19 wherein the antenna elements are positioned to vertices of a cube.

21. (Previously Presented) The method according to claim 19 wherein the antenna elements are positioned to vertices of a tetrahedron.

22. (Previously Presented) The method according to claim 11 wherein the antenna elements are fed with signals processed according to singular value decomposition for a transmission channel over the communications distance.

23. (Previously Presented) The method according to claim 22 wherein the transmission channel considered is a flat fading sub-carrier.

24. (Previously Presented) The method according to claim 22 wherein the transmission channel considered is an OFDM sub-carrier.

25. (Previously Presented) The method according to claim 11 wherein the signals received from the antenna elements are processed according to zero forcing for a transmission channel over the communications distance.

26. (Previously Presented) The method according to claim 11 wherein the signals received from the antenna elements are processed to minimize mean square error for a transmission channel over the communications distance.

27. (Previously Presented) The method according to claim 11 wherein signal processing of signals received or to be transmitted is performed at high-frequency.

28. (Previously Presented) The method according to claim 27 wherein the processing is performed by one or more 3-dB hybrids.

29. (Previously Presented) The method according to claim 27 wherein the processing is performed by one or more Butler matrix directional couplers.

30. (Previously Presented) The method according to claim 27 wherein the processing is performed by an arrangement of microstrip.

31. (Previously Presented) The method according to claim 27 wherein the processing is performed by an arrangement of waveguides.

32. (Previously Presented) The method according to claim 31 wherein the antenna configuration is a radio antenna configuration.

33. (Previously Presented) The method according to claim 31 wherein the antenna configuration is a configuration of sensors or actuators for optical communications.

34. (Currently Amended) An antenna configuration comprising:

a plurality of antenna elements[[;]] ~~and~~

~~means for configuring~~ wherein the plurality of antenna elements are configured for line of sight (LOS) communication such that separation of the antenna elements ~~separation~~ is set in relation to communications distance, communication wavelength and number of antenna elements.

35. . (Canceled)

36. (Previously Presented) The antenna configuration according to claim 34 wherein the antenna configuration maximizes MIMO channel capacity.

37. (Currently Amended) The antenna configuration according to claim 34 wherein the antenna elements separation is set in relation to $\sqrt{D\lambda / N}$ where D is communications distance, λ is communication wavelength and N is number of antenna elements, and ~~wherein~~ the antenna configuration is a linear antenna configuration.

38. (Currently Amended) The antenna configuration according to claim 34 wherein the antenna elements separation is set in relation to $\sqrt{D\lambda / N}$ where D is communications distance, λ is communication wavelength and N is number of antenna elements, and ~~wherein~~ the antenna configuration is a square grid antenna configuration.

39. (Previously Presented) The antenna configuration according to claim 38 wherein $N=n^2$ for n an integer greater than 1.

40. (Previously Presented) The antenna according to claim 34 wherein the antenna elements separation is set in relation to $\sqrt{D\lambda / N}$ where D is communications distance, λ is communication wavelength and N is number of antenna elements in dimension of separation, for a rectangular grid antenna.

41. (Currently Amended) The antenna according to claim 40 wherein the dimension of separation is a horizontal dimension.

42. (Currently Amended) The antenna according to claim 40 wherein the dimension of separation is a vertical dimension.

43. (Previously Presented) The antenna according to claim 34 wherein the antenna elements separation is set in relation to $\sqrt{D\lambda / 3}$, where D is communications distance and λ is communication wavelength, a triangular grid antenna with three antenna elements.

44. (Previously Presented) The antenna configuration according to claim 34, the antenna configuration being three-dimensional.

45. (Previously Presented) The antenna configuration according to claim 44, the antenna configuration comprising two layers, where each layer comprises a planar arrangement of antenna elements on a square grid.

46. (Previously Presented) The antenna configuration according to claim 44, the antenna configuration comprising antenna elements positioned equidistant in a three-dimensional space.

47. (Previously Presented) The antenna configuration according to claim 46, the antenna elements being positioned to vertices of a cube.

48. (Previously Presented) The method according to claim 46, the antenna elements being positioned to vertices of a tetrahedron.

49. (Currently Amended) An antenna configuration comprising:

a plurality of clusters of antenna elements[[;]] ~~means for configuring~~ wherein the antenna elements are configured such that the plurality of clusters of antenna elements are separated by a distance set in relation to communications distance, communication wavelength and number of antenna elements.

50. (Canceled)

51. (Previously Presented) The antenna configuration according to claim 49, the plurality of clusters of antenna elements being separated by a distance set in relation to $\sqrt{D\lambda / L}$, where D is communications distance, λ is communication wavelength and L is number of clusters, and wherein the antenna configuration is a linear antenna configuration.

52. (Previously Presented) The antenna configuration according to claim 49, the plurality of clusters of antenna elements being separated by a distance set in

relation to $\sqrt{D\lambda/\sqrt{L}}$ where *D* is communications distance, λ is communication wavelength and *L* is number of clusters and wherein the antenna configuration is a square grid antenna configuration.

53. (Previously Presented) The antenna configuration according to claim 52, $L=l^2$ for l an integer greater than 1.

54. (Previously Presented) The antenna configuration according to claim 49, the antenna elements within a cluster are separated by a distance smaller than the smallest distance between the plurality of clusters of antenna elements.

55. (Previously Presented) The antenna configuration according to claim 49, one or more antenna element feeders being adapted to feed the antenna elements with signals processed according to singular value decomposition for a transmission channel over the communications distance.

56. (Previously Presented) The antenna configuration according to claim 55, wherein the transmission channel considered is a flat fading sub-carrier.

57. (Previously Presented) The antenna configuration according to claim 55, wherein the transmission channel considered is an OFDM sub-carrier.

58. (Previously Presented) The antenna configuration according to claim 49, wherein one or more processing elements are adapted to process signals received from the antenna elements according to zero forcing for a transmission channel over the communications distance.

59. (Previously Presented) The antenna configuration according to claim 49, wherein one or more processing elements are adapted to process signals received

from the antenna elements to minimize mean square error for a transmission channel over the communications distance.

60. (Previously Presented) The antenna configuration according to claim 49, wherein one or more processing elements are adapted to process at high-frequency signals received or to be transmitted.

61. (Previously Presented) The antenna configuration according to claim 60, the one or more processing elements being one or more 3-dB hybrids.

62. (Previously Presented) The antenna configuration according to claim 60, the one or more processing elements being one or more Butler matrix directional couplers.

63. (Previously Presented) The antenna configuration according to claim 60, the one or more processing elements being an arrangement of microstrip.

64. (Previously Presented) The antenna configuration according to claim 60, the one or more processing elements being an arrangement of waveguides.

65. (Previously Presented) The antenna configuration according to claim 49, the antenna elements being electrically active elements.

66. (Previously Presented) The antenna configuration according to claim 49, the antenna elements being directors.

67. (Previously Presented) The antenna configuration according to claim 66, the directors being reflectors.

68. (Previously Presented) The antenna configuration according to claim 49, the antenna elements being arranged symmetrically in a circular pattern.

69. (Previously Presented) The antenna configuration according to claim 49, the antenna elements being arranged in a hexagonal pattern.

70. (Previously Presented) The antenna configuration according to claim 49, the antenna elements being mounted on position adjustable rods or wires.

71. (Previously Presented) The antenna configuration according to claim 70, the position adjustable rods or wires being electromechanically adjustable.

72. (Previously Presented) The antenna configuration according to claim 71 wherein the adjustable position is adaptive to propagation channel properties corresponding to a measured channel matrix.

73. (Previously Presented) The antenna configuration according to claim 49, the antenna configuration being adapted to a predetermined range of communications distances.

74. (Currently Amended) An antenna configuration, ~~wherein~~ the antenna configuration comprising a plurality of antenna elements, of which a subset forms an active set of antenna elements, the active antenna elements forming an antenna configuration <u>that is configured for line of sight (LOS) communication such that separation of the antenna elements is set in relation to communications distance, communication wavelength and number of antenna elements.</u>

75. (Previously Presented) The antenna configuration according to claim 49, wherein the antenna configuration is a radio antenna configuration.

76. (Previously Presented) The antenna configuration according to claim 49, wherein the antenna configuration is a configuration of sensors or actuators for optical communications.

77. (Currently Amended) A communications system ~~wherein means for carrying out the method in claim 1~~ comprising:

an antenna having a plurality of antenna elements, wherein the antenna is configured for line of sight (LOS) communication such that the antenna elements are set in relation to communications distance, communication wavelength and number of antenna elements.

78. (Canceled)

79. (Currently Amended) The communications system according to claim 78 wherein the separation of antenna elements ~~distances~~ are set different for a first and a second antenna, the two antennas operating in pair, such that the geometrical average of the elements distance of the first, antenna, d_1 and the elements distance of the second antenna, d_2, is the effective antenna elements distance.

80. (New) The communications system according to claim 78, wherein the antenna is one of a linear antenna, a square grid antenna and a rectangular grid antenna and the separation of the antenna elements is set in relation to $\sqrt{D\lambda / N}$ where D is communications distance, λ is communication wavelength and N is number of antenna elements.

81. (New) The communications system according to claim 80 wherein $N=n^2$ for n an integer greater than 1.